strata composing this moraine. At a point on the side of the moraine not far from the well, and south of the gravel pit shown in Plate III, fig. 2, it was noticed in years past that the snow always melted in winter, so that the ground would be left bare, while all around it was covered with snow. This looks very much as though warm air was coming out of the ground at this point. The phenomenon has not been observed of late years, but this is not strange, since the configuration of the moraine has been much changed by excavations, and, as already stated, but little attention has been paid to the well. Such currents would naturally cease in summer.

We may therefore safely assert that the conditions here are unusually favorable for the circulation in winter of cold air through the stratum in which the ice was found. Furthermore, as has been pointed out by Hager and Hitchcock, the layers of clay both above and below the ice help to insulate it from heat in summer both from the surface and from the interior of the earth. We are therefore in accord with Hager[7] and Balch[8] in concluding that this well, like the ice caves, is a *natural refrigerator*.

Mines in McClellan Mountain, Colo.—An ice formation somewhat similar to that at the Brandon, Vt., frozen well is found at Georgetown, Colo., in the Clear Creek County Mines in McClellan Mountain. Mr. E. L. Berthoud[9] thus describes it:

"The discovery-drift of the Centennial Lode runs into McClellan Mountain at an altitude above 13,100 feet on a course southwest, at about 30 feet from the entrance of the tunnel. Intercalated in the vein I found three or four well defined veins of solid ice, parallel with the bedding of the rock, and filling all its thinner side cracks and fissures; in fact, after further examination, I found that the frozen stratum, and the congealed, hard earth, rock, and gravel began only a few feet below the accumulated rock and débris of the mountain slope, and continued as far as the excavation reached, some 40 feet in depth.

"From the Centennial Lode I went westward about 300 feet and examined the drift that has been excavated into the mountain some 500 feet upon the vein of the International Lode. Here there is repeated the same frozen substratum and the same rift or veins of ice in the country rock and in the vein. I went into the tunnel about 100 feet and found that this glacial condition still existed; the owner of the mine assured me that the ice and frozen rock continued all the way to the end of the tunnel and caused a good deal of extra expense in mining the ore.

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"This is certainly a singular phenomenon when we consider that across the narrow valley north of McClellan Mountain, not over three-fourths of a mile distant, and upon another high peak, the limit of tree growth exceeds 12,400 feet elevation on the south slope of that peak.

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"It has been suggested[10] that the frozen soil and rock of some mines examined by him, northwest from McClellan Mountain, on the west slope, have been thus left icebound since the Glacial Period, and that they thus retain their former icebound condition, from the excessive altitude of the mines there explored.

"This may be the case, but it seems doubtful.

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"I am inclined to the belief that the glacial condition of McClellan Mountain is due to local causes. Prominent among these would be the loose nature of the soil and deep rocky débris of the mountain, and the slow percolation of water exposed to excessive evaporation that is promoted and quickened by continued gales from the north and northwest that strike against the precipitous face of the mountain range in that direction. The opposite slope, on the contrary, which shows the abnormally high timber line, faces a pass 13,100 feet high which gives a way perfectly unobstructed for south-southwest winds."

[7] Hitchcock's Geology of Vermont, Vol. I, p. 207.
[8] Glacières or Freezing Caverns, p. 79.
[9] Silliman's Am. Jour. Sci., 1876, vol. 111, p. 108.
[10] R. Weiser, Am. Jour. Sci., 1874, vol. 108, p. 477.

It is evident that ice caves and frozen wells are but different manifestations of the same phenomenon. In both cases the cold air of winter circulates to unusual depths below the surface, and freezes the small quantity of water with which it comes in contact. In summer this subterranean circulation of the air ceases, and heat finds its way to the ice only by the slow process of conduction. In consequence, the ice that accumulates during the winter and early spring may not entirely disappear during the following summer, but continue to accumulate for ages.

OUR KILLING HEAT.

By Gen. HENRY L. ABBOT, dated Cambridge, Mass., Aug. 21, 1901.
[Extract from Boston Transcript.]

In view of the general interest in tropical climates induced by recent events, perhaps you would like to receive figures extending the comparison to the Isthmus of Panama. I have just received the July sheets of two self-registering thermometers, which, for several years, have been in use by the New Panama Canal Company in its study of the elements which have a bearing upon the completion of its works now in progress on the isthmus. One station, Alhajuela, is situated about a dozen miles from the Atlantic coast, on the Upper Chagres River, where the reservoir dam will be placed; the other, La Boca, lies on the Bay of Panama, and forms the new terminal of the Panama Railroad. Both are nearly in latitude 9° north. The figures, therefore, present both the interior and the coastwise climates of the isthmus. The mean monthly temperature (including every hour of July) was at Alhajuela 77.4°, at La Boca 81.5° F. The table below exhibits the extraordinary uniformity of the climate, the mercury only once rising above 90°, and never falling below 80° at the hottest hour of the day. It may be added that this monthly record might represent any other month of the year, there being no sensible difference in winter and summer, although the range in the twenty-four hours is distinctly greater in the four dry months than in the eight rainy months.

Isthmian daily maximum temperature in July, 1901.

Date.	Alhajuela.	La Boca.	Date.	Alhajuela.	La Boca.
	°F.	°F.		°F.	°F.
1	82.	82.4	17	83.8	84.4
2	82.2	83 8	18	83.8	84 2
3	88.3	86.5	19	80.1	80.8
4	87.6	87.8	20	86.0	84.6
5	83.3	85.3	21	85.8	86.0
6	86.2	87.4	22	85.8	84.9
7	82.8	84.2	23	82.4	84.7
8	85.6	87.8	24	91.2	86.2
9	82.8	82.2	25	87.8	86.0
10	83.3	85.1	26	86.4	84.4
11	86 2	87.4	27	82.1	83.1
12	86.0	86.5	28	86.0	86.9
13	84.2	88.3	29	81.0	84.2
14	84.2	85.1	30	87.4	87.8
15	81.9	84.0	31	87.8	88.5
16	88.9	88.2			

These figures demonstrate, what is well understood, that it is the uniformity of the heat and not the highest temperature that is characteristic of the Tropics and that renders the climate oppressive.